

AMENDMENTS TO THE DRAWINGS

Attached are replacement, formal drawings. Figures 4 and 5 are indicated to be "prior art".

Attachment: Replacement Sheet(s)
Annotated Sheet Showing Changes

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 5, 6 and 9-20 are pending in the application subsequent to entry of this Amendment.

In item 10 of the Official Action the examiner indicates that claims 5 and 6 would be allowed if amended or rewritten to attend to various claim informalities. Applicants submit that these claim are properly worded, free of the prior art and consistent with the description and disclosures of the present invention. Allowance of these claims is solicited.

Claims 1-4, 7 and 8 have been canceled and a new set claims added. Claim 4 has been canceled and the subject matter of the previous claims has been adjusted in order to respond to the examiner's comments regarding claim clarity.

Addressing the issues raised in the outstanding Action in the order presented, it is proposed to amend Figures 4 and 5 to label them as "Prior Art" as the examiner requests. Replacement sheets are provided with this response.

With regard to no. 2, reference sign "63A" is not explicitly discussed in the description however in the context of the overall disclosure and the prior art referenced in these figures the nature and character of reference sign 63A will be apparent. Submitted with this response is a substitute specification attending to this and other adjustments requested by the examiner and made by applicants.

The relevant passages on pages 4 and 5 (referenced to the text as filed) have been amended in order to include a discussion of reference sign 63A. As this information pertains to acknowledged prior art, it is not critical to the disclosure of the present application. However, basis for these changes will be apparent considering the overall discussion presented relative to these drawings.

In item 3 of the Official Action the examiner points out three instances of lack of clarity in the description. These have been addressed as well as some other minor changes none of which are believed to be controversial. For convenience a substitute specification is provided.

Statement Under 37 CFR §1.125(c) - Submitted herewith is a copy of the immediate prior version of the specification marked to show changes. A clean version (without markings) is also supplied. The substitute specification does not contain added subject matter.

In item 5 of the Official Action the examiner points out passages in claims 1, 3 and 7 which are regarded as lacking clarity. Applicants have addressed these comments and adjusted the claims accordingly. The various measurement parameters of widths and lengths as used in the claims are illustrated in the drawings, in particular Figures 1 and 2 and thus will be understood by reference to not only the written description but also the illustrations serving to describe the invention.

Counsel notes that there are no lack of clarity rejections directed to claims 5 and 6, thus by the terms indicated in item 10 of the Official Action these claims should be allowed.

The balance of the Official Action relates to rejections based upon prior art. In item 7 the examiner alleges claims 1-4, 7 and 8 are anticipated by Keito et al U.S.-2003/0224242 and in item 9 of the Official Action it is argued that claims 1-4, 7 and 8 are anticipated by Spillman U.S. 5,631,102. To the extent that the examiner's concerns might extend to the new and amended claims presented above, both of these rejections are traversed.

The present invention features a secondary battery having an electrode sheet with an active material layer residing on one surface thereof over a broader range than the width of an electrode and a narrower range than the width of the electrode sheet. An insulating sheet is adhered to a part of the electrode sheet where a short-circuit may possibly occur, such part being opposed to another electrode. The invention is characterized in that the electrode sheet and the insulating member are simultaneously cut to form an electrode plate having a predetermined shape that the width of the electrode plate, a width of an active material layer on the electrode plate and a length of the insulating sheet are substantially the same, and/or in that an insulating sheet is adhered with a low-temperature thermoplastic adhesive plate -- a material that has as little adhesion as possible at room temperature of 18 to 20 degrees Celsius but increases adhesion at a temperature of 60 to 120 degree Celsius. This is explained in the paragraph bridging pages 11-12 of the specification. For the reasons stated above, the present invention is able to prevent the paste material on an insulating sheet from adhering to the manufacturing equipment at the time of producing an electrode plate and a core body. Also, the present invention provides a secondary battery of increased production efficiency and an improved manufacturing method of producing a secondary battery.

Keito et al. discloses an electrode plate forming an insulating layer, but the active material layer on the electrode sheet would not be adhered to the same width with the electroplate since an insulating portion exists along a longitudinal direction of the electrode plate as shown on Fig. 1, 3, 4 and 6. Accordingly, the width of the sheet material (a current collector foil), width of the active material layer, and width (length) of the insulating tape by Keito et al. do not have the relationships like the disclosures and claims of the present application the Keito et al disclosure would lead to decreased production efficiency because the space for the electrode plate for the width of the electrode sheet is small. And it is indicated that a subject portion of insulation by Keito et al. is different from that of the present application.

As an insulating sheet material, Keito et al. only discloses a coating solution of a resin dissolved in a solvent and a tape comprising a base material such as polypropylene and an acrylic resin type adhesive. Keito does not disclose a low-temperature thermoplastic paste material that increases in adhesion at a temperature of 60 to 120 degree Celsius, by which the desirable effects of the present invention are realized.

Therefore, the electrode plates and secondary batteries of the present invention are not anticipated from Keito et al.

As an insulating sheet material, Spillman et al. discloses only a woven fiber and non-woven fiber base material and it is silent about paste materials nor does it disclose means to adhere them.

Spillman et al. discloses covering a leading edge of an electrode plate by a separator insert. However, since the separator insert corresponding to electrode sheet and the insulator sheet are not cut simultaneously, the width of the sheet material (a current collector foil), width of an active material layer and width (length) of the insulating sheet of the electrode plate are not the same and this leads to protruding from the electrode plate as can be seen on Fig.1 of Spillman et al.. Provided that the separator insert is the one carrying the paste material, the paste material applied to a protruded portion of the separator insert causes adhering to the manufacturing equipment. Therefore Spillman's arrangement cannot prevent other parts from adhering the paste material on the insulating sheet. Accordingly, Spillman et al. cannot attain the objects of the present application.

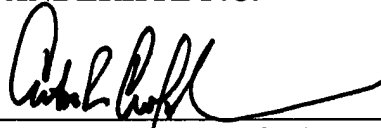
YANAGAWA et al.
Appl. No. 10/768,192
June 22, 2006

For the above reasons it is respectfully submitted that the claims of this application define inventive subject matter. Reconsideration and allowance are solicited. Should the examiner require further information, please contact the undersigned.

Respectfully submitted,

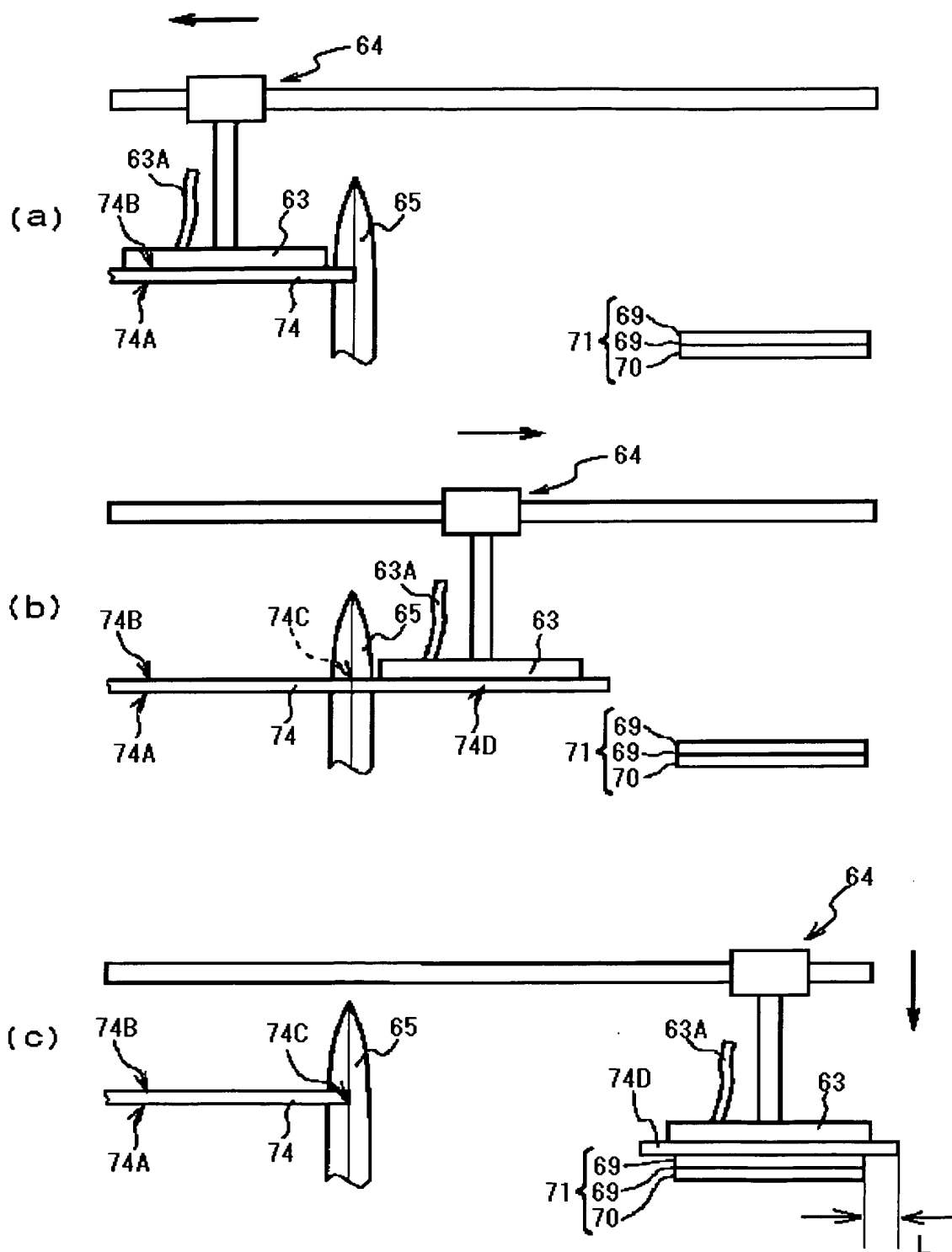
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**Fig.5**

PRIOR ART